Software Development Methods
CS 2110 – Fall 2020

Lecture

Lecture			
Section	**Time***	**Room**	**Instructor**
001	MWF 10:00–10:50 am	*Online*	Derrick Stone
002	MWF 12:00–12:50 pm	*Online*	Daniel Graham
003	MWF 01:00–01:50 pm	*Online*	Nada Basit
004	MWF 09:00–09:50 am	*Online*	Derrick Stone

*For reference only. All times are EST. (Lecture video recordings will be posted on *teachable*)

Course Description

If you take a moment to think about all the ways computerization has penetrated our daily lives, from having the weather forecast at your fingertips to life and death decision making, the importance of writing precise and correct computer instruction (code) is self-evident.

Who Should Take This Course?
This is a second course in computing and software development, with an emphasis both on software development concepts and on principles central to computer science. To achieve this, the course has the following objectives:

(a) understand and implement object-oriented programming principles;
(b) be introduced to the way software systems are designed, implemented, tested, and maintained;
(c) apply best practices in terms of system testing to save time, minimize cost, and avoid hardships;
(d) expand on existing experience with the art of computer science;
(e) provide practical experience in software engineering and to increase your skill as a programmer.

Prerequisites:
To be successful, students should:

● Have the equivalent of one semester of programming knowledge (specific language does not matter), as demonstrated by any of the following:
● Have taken CS 1110/1111/1112/1120 with a C- or better.
● Have credit on your transcript for an equivalent course from high school or another university.
● Passed the CS 1110 placement exam, AP exam, IB exam, etc.
(http://www.cs.virginia.edu/~sherriff/cs1110/placement.php Go to this link for information on

the placement test. It must be turned in by 3:30pm the first Friday of the term to be used as a prerequisite for this course).

If you feel you have *not* met these prerequisites, please contact the instructors <u>immediately</u>.

Cohorts: You will be assigned to a cohort of three to five other students. A teaching assistant (TA) will be assigned to each cohort. Expect to get a survey at the start of the semester to collect time zones, which the instructors will use to assign you to a cohort at the beginning of the semester. Cohorts will sign up for a regular meeting time and share that time with your instructors/TAs so that we (the instructors) can drop in and say hello!

Readings: For most classes there is an assigned reading (see **Course Schedule** on Collab Home page). We expect you to have completed this reading **<u>before</u>** class. We will conduct lecture under the assumption that you have completed this reading. This is intended to get you familiar with the topics but we don't expect you to have mastered the material at this time. Some lecture topics will not be part of any of the course texts.

Lectures:
Our first day of class will be on Wednesday August 26th. All lectures will be recorded and will be available on https://cs2110-software-development-methods.teachable.com. New lectures will be released every Monday, Wednesday and Friday at 9:00 am. The course schedule will be available on the course Collab site, and we will add you to that site soon.

Evaluating Your Progress in the Course

Lab Activities (15%): Studies show the more you engage the more you will learn. In order to achieve this, everyone should be participating in activities, peer collaborations, and discussions both in and out of class. Further, speaking with peers will result in different points of views and ideas. A lab activity will be assigned with most lectures; you'll meet with your cohort to complete it. The previous week's activities are due the on following **Monday at 11:30 pm**. You should expect to spend at least an hour on the week's lab activities. Everyone who participates in the lab activity must submit a copy via Collab to earn credit (It's O.K. for every member to submit the same thing). Only submit the lab activity if you participated. **We'll drop the lowest two (2) activities.**

Homework Assignments (30%): Homework assignments help you practice coding, apply concepts and develop your computer science and software development skills. There will be several homework assignments assigned throughout the semester. You can work on your homework assignment with your cohort. However, all homework collaboration is subject to the empty hands policy. The empty hands policy, states that you must leave the discussion without any record [electronic, mechanical or otherwise] of the discussion. Homework assignments will not be handed out in class; they will be made available online, and will be submitted online. Unless otherwise stated, homework assignments are due **by 11:30 pm on the scheduled date**. **Each member of the cohort must submit <u>their own copy of the homework assignment</u> to Collab.** We'll allow you to submit your homework assignment **up to 48 hours** beyond the due date. A 10% **late penalty** will apply to homework assignments submitted up to 24 hours late, and a

further 10% late penalty will apply to homework assignments submitted between 24 and 48 hours late (maximum 20% late penalty)**. No homework will be accepted 48 hours after the due date. No homework assignments will be dropped.**

Quizzes (10%): There will be weekly quizzes. The format of these will be multiple choice, T/F, and possibly short answer questions. You will not be expected to write code on quizzes. A new quiz will be available on Collab, every Friday afternoon. Quizzes are due two days later, **by 11:30 pm Sunday night.** All quizzes are open book/open notes. You can discuss answers to quiz questions with your cohort; but each member of the cohort must **submit their own copy of the quiz** to collab. It's the student's responsibility to keep up with the weekly quizzes. **Your lowest one (1) quiz score will be dropped.**
Syllabus Quiz: There is a special quiz on the syllabus that doesn't count towards your grade. Completing this quiz (and obtaining a score of 100%) is required to remain in the course. You can take this quiz as many times as you like. It will be open for two weeks from the start of the semester.

Exams (Exam 1, 2, Final Exam) **(10% for each midterm, 25% for the final)**:
There will be two (2) midterms, and one (1) final exam. These will be administered online through Collab and an external testing site ("Ford"). All sections will take the same midterms and final. All exams will be open book/internet, open notes, but NOT open neighbor(s). **Exams must be completed individually.** These exams are designed to assess the knowledge, skills and concepts learned during the semesters. Exam 1 will cover the first third of the course, Exam 2 will cover the second third of the course, and the Final Exam will mainly cover the remainder of the course, with some material from the first two-thirds. Each exam will consist of a mix of questions, and may include: multiple-choice, coding, short-answer, compare-contrast, applied concept, and true-false questions.

The **final exam** is currently scheduled for **Friday, December 4, 2020** for ALL four sections. The exam will be open for 24 hours: 12:00am – 11:59pm. While you may start the exam at any time during this period, but there will be a time limit. Updated information on all exam dates and locations will be available on the CS 2110 Collab page. Let the instructors know as soon as possible **before the exam** if you are aware of a conflict with any of these exams. Any non-excused absence will result in a zero (0) on the corresponding exam. **No exams will be dropped.**

Your final letter grade for the semester will be determined according to the following scale:

Grade	Minimum	Maximum
A+	100.0	∞
A	93.0	99.999
A−	90.0	92.999
B+	87.0	89.999
B	83.0	86.999

B−	80.0	82.999
C+	77.0	79.999
C	73.0	76.999
C−	70.0	72.999
D+	67.0	69.999
D	63.0	66.999
D−	60.0	62.999
F	0.0	59.999

Students enrolled as **pass/fail** require a **63.0 or higher** to pass. There is no rounding up of grades in the course.

Contact Information

Instructors:

PROF. DANIEL GRAHAM	PROF. NADA BASIT	PROF. DERRICK STONE

Email: dgg6b@virginia.edu
Passcode: 1d722p
Zoom: click here
 	
Office Hours:
   Post on Collab
	Email: basit@virginia.ed
	Office Hours:
	Posted on Collab
		Email: djs6d@virginia.edu
		Office Hours:
		   Posted on Collab

» Instructor Office Hours will begin on the week of August 31, 2020 «
Generally stopping by office hours or emailing is the best way to get in touch!

Teaching Assistants:

Teaching Assistant (TA) office hour information will be posted on Collab.

When sending any email please remember to include "**CS 2110**" in your email subject. When sending an email to your lab Head TAs, please remember to include "**CS 2110**" in your email subject to ensure the TAs can attend to your email as soon as possible.

Message Boards: To visit the Piazza site: piazza.com/virginia/fall2020/cs2110fall2020
Use Piazza, not email, for questions related to course material. **DO NOT POST CODE RELATED TO COURSE WORK**–any code at all–on a public thread in Piazza (on private threads with instructors are OK).

Use email, not Piazza, for personal issues, emergencies, and the like.

Course Resources

A textbook is a great resource that supplements the classroom experience. The **two** primary textbooks for the course are listed below, along with other suggested resources:

1. [Primary] *BIG JAVA Early Objects, Sixth Edition* by Cay Horstmann
2. [Primary] *Modern Software Development Using Java, Second Edition* by Paul Tymann and G. Michael Schneider. This text is freely available online at http://www.cs.rit.edu/~ptt/msd/. Affordable print copies are hard to find. **Don't use the First edition**.
3. You should own or have access to a good **Java reference book**. If you don't you might try an online source such as:
   - *Java Programming* (a wikibook)
   - *Thinking in Java* by Bruce Eckel;
   - *Introduction to Computer Science using Java* by Bradley Kjell; or
   - Fred Swartz's topic-based review.
4. **CodingBat** (http://codingbat.com/java) is a free online website to help you build coding skills in Java (Python, too!) Going through many practice problems is a great way to practice and solidify your understanding of coding concepts. We will assign specific problems from this site early on in the semester.

If you find other good online references*, let us know!*
Other readings may be assigned from the Web or provided by the instructors.

Course Schedule

The course schedule will be posted on the CS 2110 Collab page.

This Syllabus

This syllabus is to be considered a reference document that can and will be adjusted through the course of the semester to address changing needs. This syllabus can be changed at any time without notification. It is up to the student to monitor this page for any changes. Final authority on any decision in this course rests with the instructors, not with this document.

Class Management & Policies

Contacting Course Staff (Instructors and Teaching Assistants)
Different kinds of requests should be given to course staff in different ways:

Purpose	Contact
Concept Question	Piazza, or Office Hours
Code Question	Private post on Piazza, or TA Office Hours
Grading	Point of Contact for HW / Cohort TA
Personal issues	Instructor email, and/or in person

If you send an email, *always* **include "CS 2110" (and your section number) in the email subject line.** We teach other courses as well; without such a subject header it may be difficult to know which course you are referring to.

Regrades

After assigned work (homework, exams, quizzes, lab activities, etc.) is returned, it may be that you would like to discuss the points you earned for one or more questions. This is called a regrade request. Unless indicated otherwise, all regrade requests must be made within **7 days** of the assignment being returned to the student.

Please note the following:
- Regrade requests for exams will be made with the instructors during office hours or an agreed upon scheduled time; other requests will be made directly to the TA responsible for grading the assignment.
- Regrade requests are appropriate when an assignment has been graded incorrectly, and should be specific.

Collaboration Policy and Academic Integrity

Collaboration
Collaboration is a great way to learn and we do allow some level of collaboration within your cohort (e.g. discussing homework assignments and lab activities), however there are times when collaboration is not permitted such as on the exams.

Empty Hands policy: "When writing programs, you should follow the **Empty Hands policy** for any collaboration with other students: you can discuss the assignments, but you cannot keep any record of the discussion (paper or electronic). More specifically, if you collaborate with another student, you must walk away from your discussion with "empty hands," i.e., no record on paper, in an email, in a chat, on a white board, in your code, in a photo, etc., no sharing code. This means that assignments must be the result of your own academic effort. If you work with, help, or receive help from anybody (student, tutor or professor), you must document that in a comment in your code. Any copied work, or work that does not follow the Empty Hands policy is an Honor Code violation." -Lynn Lampert (CNU).

If you are struggling or need assistance, the instructors and the course staff are here to help you. Please reach out to us!

Academic Integrity
The School of Engineering and Applied Science relies upon and cherishes its community of trust. We firmly endorse, uphold, and embrace the University's Honor principle that students will not lie, cheat, or steal, nor shall they tolerate those who do. We recognize that even one honor infraction can destroy an exemplary reputation that has taken years to build. Acting in a manner consistent with the principles of honor will benefit every member of the community both while enrolled in the Engineering School and in the future.

Students are expected to be familiar with the university honor code, including the section on academic fraud (http://www.student.virginia.edu/~honor/proc/fraud.html). Sharing work without permission, turning in others' work as your own, or otherwise behaving in ways inconsistent with the community of trust is not permitted.
- Lab activities: Everyone should collaborate with their assigned cohort on the lab activities. However, each student must submit a copy via Collab to earn credit (It's O.K. for every member to submit the same document). Only submit the lab activity if you participated.
- Quizzes: Everyone can collaborate with their assigned cohort on the quizzes; but each member of the cohort must **submit their own copy of the quiz** to Collab.
- Homework assignments: Everyone can collaborate with their assigned cohort on the homework assignments. However, all homework collaboration is subject to the **empty hands policy**. Each member of the cohort must **submit their own copy of the homework assignment.**
- Exams: Are **individual work**. Absolutely no collaboration is permitted.

Do not copy code from the Internet:
Homework assignments help you practice coding, apply concepts and develop your computer science and software development skills. Apply the **empty hands policy** to sources. Do not copy solutions from the Internet.

Penalties

Academic Integrity and Plagiarism Penalty – up to 100% course grade penalty
If course staff detect cheating, plagiarism, sharing or copying another solution to an assignment, or other dishonest behavior, they may impose any penalty **up to and including a failing grade in the course**. This is independent of and in addition to the operations of the Honor Code.

If an infraction of the honor code is detected on an <u>assignment</u> or <u>exam</u>, the following penalties will be applied:

1st Offense – You will receive zero (0) points.
2nd Offense – Automatic F in the course.

A note regarding Honor Code Referrals: The course is not bound by the decisions of the Honor Committee as it relates to expulsion. If we refer you for an honor violation, and you are not expelled, the above penalties will still be applied.

<u>**Participation/Professionalism Penalty**</u> – up to 10% course grade penalty
Unprofessional behavior such as: misbehavior towards instructor/classmates/TAs, and causing distractions for other students can be held against a student when final grades are calculated. Penalty can be up to 10% of course grade.

Discrimination and power-based violence

The University of Virginia is dedicated to providing a safe and equitable learning environment for all students. To that end, it is vital that you know two values that I and the University hold as critically important:
  a. Power-based personal violence will not be tolerated.
  b. Everyone has a responsibility to do their part to maintain a safe community on Grounds.
If you or someone you know has been affected by power-based personal violence, more information can be found on the UVA Sexual Violence website that describes reporting options and resources available – www.virginia.edu/sexualviolence.

As your professor and as a person, know that I care about you and your well-being and stand ready to provide support and resources as I can. As a faculty member, I am a responsible employee, which means that I am required by University policy and federal law to report what you tell me to the University's Title IX Coordinator. The Title IX Coordinator's job is to ensure that the reporting student receives the resources and support that they need, while also reviewing the information presented to determine whether further action is necessary to ensure survivor safety and the safety of the University community. If you wish to report something that you have seen, you can do so at the **Just Report It portal**. **The worst possible situation would be for you or your friend to remain silent when there are so many here willing and able to help.**

SDAC & Other Special Circumstances

If you have been identified as a **Student Disability Access Center (SDAC)** student, please let the Center know you are taking this class. If you suspect you should be an SDAC student, please schedule an appointment with them for an evaluation. We happily and discreetly provide the recommended accommodations for those students identified by the SDAC. Please contact your instructor at least one week before an exam so we can make accommodations.

> *Website*: http://www.virginia.edu/studenthealth/sdac/sdac.html
> *Phone*: (434)-243-5180 | *Email*: sdac@virginia.edu

If you are affected by a situation that falls within issues addressed by the SDAC and the instructor and staff are not informed about this in advance, this prevents us from helping during the semester, and it is unfair to request special considerations at the end of the term or after work is completed. So we request you inform the instructor as early in the term as possible your circumstances.

If you have other special circumstances (athletics, other university-related activities, etc.) please contact your instructor and/or Head lab TA as soon as you know these may affect you in class.

Alternatively, there are also other University of Virginia resources available. The Student Health Center offers **Counseling and Psychological Services (CAPS)** for its students. Call 434-243-5150 (or 434-972-7004 for after hours and weekend crisis assistance) to get started and schedule an appointment. If you prefer to speak anonymously and confidentially over the phone, call Madison House's HELP Line at any hour of any day: 434-295-8255.

Green Dot ~ Violence Prevention and Sexual Assault Prevention

The Department of Computer Science is committed to a safe and violence-free campus. Violence is not OK and will not be tolerated. We are committed to supporting and encouraging students, staff and faculty to take responsibility for safety on our Grounds. If you or someone you know experience stalking, partner violence or sexual assault, please know you are not alone. Don't stay silent - there are many people willing and able to help. Here are some resources that can help:
www.virginia.edu/sexualviolence, and www.virginia.edu/justreportit/confidential_resources.pdf.